

Name _Answer Key_____ Date _12/7_

Mechanical and Chemical Weathering Study Guide

What is weathering?

Weathering is a process that breaks rocks and other materials on the Earth's surface into smaller pieces.

What is the difference between mechanical and chemical weathering?

Mechanical weathering involves the physical breaking of rocks into smaller pieces without changing what the rock is made of.

Chemical weathering involves a change in the rock's composition or what it is made of. Some of the minerals in the rock chemically combine with some other substance. For example: Iron in the rock combines with oxygen to form rust.

Name the five types of mechanical weathering.

Freezing and thawing, animal actions, plant growth, release of pressure, abrasion

Name the five types of chemical weathering.

Living organisms, oxygen, carbon dioxide, acid rain, water

Water can cause both chemical and mechanical weathering. Explain and describe.

Water can carry rock and sand particles that bump against rocks and break them into smaller pieces. This is a form of abrasion or mechanical weathering.

Water can also get into the cracks of a rock, freeze and push the crack apart. This is also mechanical weathering.

Water can dissolve the minerals in a rock changing the make-up of the rock. This is chemical weathering.

Name all the ways that water is involved in the process of chemical weathering.

- 1. Water can dissolve the minerals in a rock thus changing it chemically.**
- 2. Water can dissolve the carbon dioxide in the atmosphere creating carbonic acid, which chemically wears away rock.**
- 3. Water and oxygen combine with iron in rock to form rust which is a form of chemical weathering.**

Mechanical weathering caused by abrasion can happen in many ways. Briefly describe at least three.

- 1. Water can carry sand and rock particles that bump into other rocks and wear them away. This is abrasion.**
- 2. Wind can carry sand and rock particles and smash them against buildings made of stone and other rocks causing them to wear away. This is abrasion.**
- 3. Gravity can pull rocks and dirt down a slope, as the material moves down the slope it crashes into other rocks causing them to break. This is abrasion.**

How do plants cause both mechanical and chemical weathering? Please state some examples.

Mechanical: Roots of trees and other plants grow into the cracks in rocks. As the plant gets bigger so does the roots. The larger roots push against the sides of the crack forcing it apart.

Chemical: As plants grow the roots give off a weak acid. This acid can dissolve some of the minerals in a rock causing chemical weathering.